USDA United States Department of Agriculture

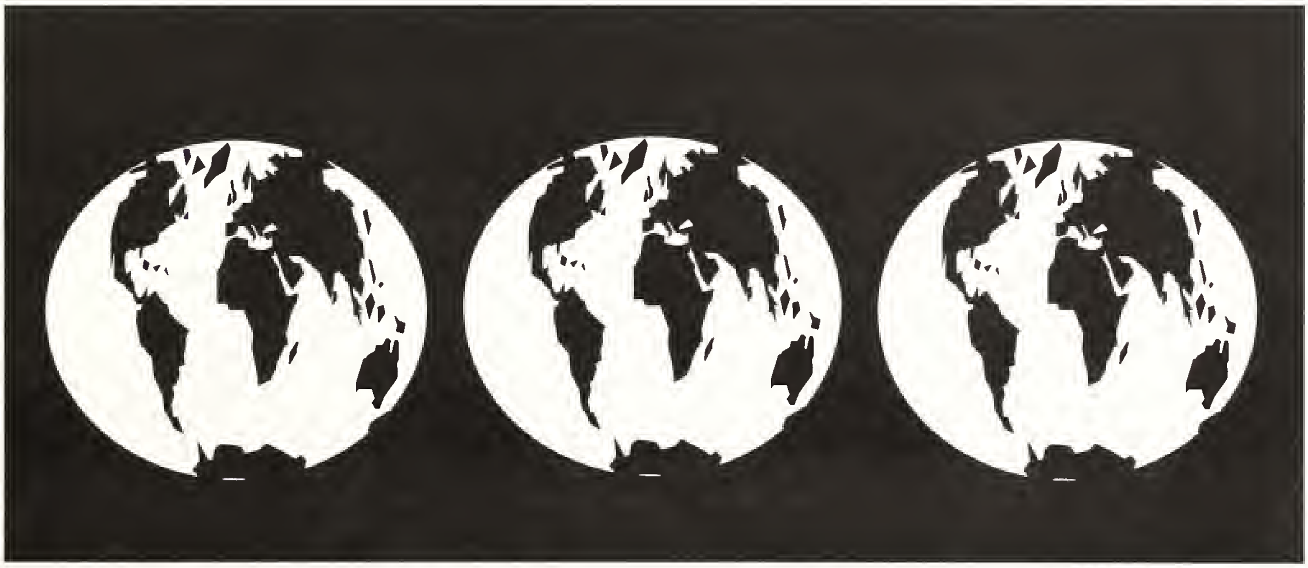
ERS

Technical Bulletin Number 1854

An Economic Research Service Report

U.S. Export Performance in Agricultural Markets

Mark J. Gehlhar
Thomas L. Vollrath



It's Easy to Order Another Copy!

Just dial 1-800-999-6779. Toll-free in the United States and Canada. Other areas please call 1-703-834-0125.

Ask for *U.S. Export Performance in Agricultural Markets* (TB-1854).

The cost is $9.00 per copy. For non-U.S. addresses (includes Canada), add 25 percent. Charge your purchases to your VISA or MasterCard. Or send a check or purchase order (made payable to ERS-NASS) to:

ERS-NASS
341 Victory Drive
Herndon, VA 20170-5217

*For additional information about ERS publications, databases, and other products, both paper and electronic, visit the **ERS Home Page** on the Internet at http://www.econ.ag.gov*

U.S. Export Performance in Agricultural Markets. By Mark J. Gehlhar and Thomas L. Vollrath, Commercial Agriculture Division, Economic Research Service, U.S. Department of Agriculture. Technical Bulletin No. 1854.

Abstract

U.S. market shares are commonly used as measures of export performance in international markets and are frequently cited statistics in USDA publications. A drop in the U.S. market share is not necessarily associated with displaced U.S. sales from competing suppliers. Accurate interpretation of changes in the agricultural market share requires understanding of the changing structure of world trade. This report develops a method, called trade-share accounting (TSA), that establishes the relationship between trade structure and market share.

Keywords: Agricultural exports, market share, commodity composition, export performance, trade structure

Acknowledgments

Competitiveness Study: This report is part of a series that focuses on issues related to U.S. agricultural competitiveness in global markets. Work on this study was done jointly between the Trade Analysis Branch of the Economic Research Service and the Department of Applied Economics, University of Minnesota. The study was financed, in part, by a National Research Initiative Competitive Grant from Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture. We acknowledge Nicole Ballenger, Bill Coyle, Larry Deaton, Margaret Malanoski, Paul Johnston, Mathew Shane, and Ian Sheldon for their comments and suggestions.

Washington, DC 20005-4788 February 1997

Contents

Summary

U.S. market shares are commonly used as measures of economic performance in international markets and are frequently cited statistics in USDA publications, yet their significance is not fully understood. Accurate interpretation of changes in the U.S. agricultural market share requires understanding of the changing structure of trade. Structural effects that negatively affect the aggregate share should not necessarily be viewed as detrimental to U.S. agriculture. Rather, they may signal potential growth opportunities in the sector.

To obtain insight about U.S. export performance in the foreign agricultural market, we developed an accounting method called trade-share accounting (TSA). This framework accounts for changes in the U.S. aggregate share by establishing the relationship between composition of world trade and disaggregate market shares. Disaggregate trade shares for the agricultural sector are used for individual commodity groupings and country/regions.

A rise (fall) in U.S. agricultural exports associated with a rise (fall) in the U.S. aggregate market share is not coincidental. But exports and the aggregate market share need not move in the same direction. Aggregate market share is not a summary measure of performance in individual markets. The U.S. aggregate market share can rise or fall, even if the United States retains constant market shares in all country-commodity markets. The loss in the U.S. share is not always a sign of deteriorating U.S. export performance in individual markets. Such a loss can be the result of individual markets becoming relatively larger in the global agricultural marketplace where the United States happens to have market shares below its aggregate share.

Recently, the United States experienced strong export performance with rapid growth and increased market shares in most markets. However, this strong performance was not seen in the aggregate market share. The changing composition of world agricultural trade significantly affects the U.S. aggregate share because the United States exports numerous commodities with widely different market shares.

U.S. Export Performance in Agricultural Markets

Mark J. Gehlhar
Thomas L. Vollrath

Market shares are commonly used indicators of export performance. They are frequently cited statistics in USDA and other publications (Ackerman, Smith, and Suarez; Bredahl, Abbott, and Reed; Kurtzig and Shapouri; Rhoades; and Schumacher). Because of the association between export performance and market share, the loss in U.S. agricultural market share concerns policymakers (de la Garza; Harkin). Analysts have examined market shares from various angles. Some have focused on individual commodity markets (Alston, Carter, and Jarvis; Daft; Green; and Coyle and Dyck). Others have treated total agriculture as a market (Pick, Arnade, and Vasavada).[1]

Introduction

There is no question that the United States is a formidable competitor in the world agricultural market. No other country exports such a large and diverse volume of agriculture. Moreover, the recent growth of U.S. exports would seem to indicate that U.S. agriculture is prospering in the global marketplace. From 1987 to 1994, the real value of U.S. agricultural exports grew at an impressive 6.7 percent per year. However, in 1994 the aggregate U.S. agricultural market share remained 6.9 percentage points below the 1981 level.

A drop in the U.S. market share is often associated with displaced U.S. sales from competing suppliers. But, this need not be the case. The U.S. aggregate share, although not typically calculated as an average, in fact, is a trade-weighted average of U.S. shares in individual markets. The foreign agricultural market is composed of various country-commodity markets. U.S. shares vary widely across these individual markets. Over time, import levels in individual markets change relative to each other as differential growth occurs. Growth changes the structure of world trade. Due to nonuniform U.S. shares across markets and the changing structure of world trade, the aggregate U.S. share fluctuates. A drop in the U.S. share attributable to the changing trade structure can give a false impression of weakening export performance.

Evaluating U.S. export performance requires an understanding of trade structure. We develop an accounting framework, called trade-share accounting (TSA), which is capable of decomposing the effects of structural change on market share. It does so by establishing the relationship between individual markets and the U.S. aggregate market share. The TSA method quantifies the effect individual markets have on the U.S. aggregate market share for a given time interval.

In recent years, slower growth has occurred in markets where the United States holds comparatively high market shares, namely the bulk commodities. At the same time, the composition of U.S. agricultural exports has shifted towards high-value products, where the United States has lower market shares. Under these circumstances, the United States can simultaneously experience high export growth, expanding shares in individual markets, yet a falling aggregate market share.

Over the past 30 years, the U.S. agricultural share has fluctuated widely. Was the sudden loss in share in the mid-1980's due to foreign competitors displacing U.S. exports or was this due to structural change? How have fast-growing markets with low U.S. shares contributed to the change in aggregate share in recent years? We seek to answer these and other questions using the TSA method.

[1]These authors attempted to explain the role of technology and its effect on the aggregate agricultural market share.

Trade-Share Accounting

The U.S. agricultural market share is usually calculated as the U.S.-to-world ratio of total agricultural exports. When the share is calculated as an aggregate, it is difficult to account for how individual markets affect the aggregate. A simple accounting relationship exists between the aggregate market share and the elements making up that share. These elements consist of market-specific trade shares. To preserve the accounting relationship between individual trade shares and the aggregate market share, we calculate the aggregate from the country-commodity level. This relationship provides the means to measure the effect that individual markets have on the overall U.S. agricultural market share. It enables us to pinpoint key individual markets and precisely quantify their effects on the U.S. aggregate market share in any given time interval.

An individual market can be defined as an importer (for example, the Japanese market); a commodity (for example, the wheat market); or a specific importer-commodity (for example, the Japanese wheat market). We denote the value of *U.S.* exports in individual market *i* in time period *t* as $V_{US(i,t)}$. The value of *competitor* exports in market *i* for time period *t* is denoted as $V_{CP(i,t)}$. The individual market share for the United States is denoted by $M_{US(i,t)}$, calculated as follows:

$$M_{US(i,t)} = \frac{V_{US(i,t)}}{V_{CP(i,t)} + V_{US(i,t)}} .$$

The individual market share can be linked to the aggregate market share using structural shares. A structural share is the relative size of the individual market in the world total, $S_{(i,t)}$:

$$S_{(i,t)} = \frac{V_{US(i,t)} + V_{CP(i,t)}}{\sum_{i \in IMKT} V_{US(i,t)} + \sum_{i \in IMKT} V_{CP(i,t)}} .$$

The TSA method requires that the set of individual markets, *IMKT*, contains all markets. Since this method is exhaustive in market coverage we have:

$$\sum_{i \in IMKT} S_{(i,t)} = 1 .$$

The U.S. aggregate market share, calculated as the size-weighted average, is represented by:

$$M_{US(t)} = \sum_{i \in IMKT} M_{US(i,t)} S_{(i,t)} .$$

This share-weighted average is equivalent to the conventional way of calculating the U.S. aggregate market share:

$$M_{US(t)} = \frac{V_{US(t)}}{V_{CP(t)} + V_{US(t)}} .$$

The U.S. aggregate market share can be decomposed into individual market *components*, $C_{US(i,t)}$:

$$C_{US(i,t)} = M_{US(i,t)} S_{(i,t)} .$$

Using these components, we can decompose a *change* in aggregate market share over *time interval* t_I to identify the *individual market effect*, $E_{US(i,t_I)}$:

$$E_{US(i,t_I)} = C_{US(i,t_1)} - C_{US(i,t_0)} .$$

Individual markets can yield both positive and negative effects. The change in the aggregate market share during any given time interval is the *net effect of all markets*, $N_{US(t_I)}$:

$$N_{US(t_I)} = \sum_{i \in IMKT} E_{US(i,t_I)} .$$

The above is usually viewed in a more conventional way, namely as the change in aggregate market shares between two points in time:

$$N_{US(t_I)} = M_{US(t_1)} - M_{US(t_0)} .$$

The TSA method, which expresses the change in the aggregate market share as the net effect of individual components, provides the means for understanding the relationship between structure and performance in individual markets. Given that structural shares serve as weights in the TSA calculation of the aggregate market share, structural change affects the aggregate market share. It is, therefore, intuitive that shifts in the aggregate market share may occur even when all individual market shares remain constant.

We now show that the United States can lose aggregate market share while maintaining constant market shares in individual markets. Suppose we have only two individual markets to which the United States exports and

that $M_{US(1,t_0)} > M_{US(2,t_0)}$. Suppose also that Market 2 grows faster than Market 1. With constant market shares over some time interval, we have $M_{US(1,t_0)} = M_{US(1,t_1)}$, and $M_{US(2,t_0)} = M_{US(2,t_1)}$. We know that $N_{US} = E_{US(1)} + E_{US(2)}$ and that $E_{US(1)} = M_{US(1,t_1)}S_{(1,t_1)} - M_{US(1,t_0)}S_{(1,t_0)}$. If Market 1 grows slower than Market 2, we can say that $\hat{S}_1 < 0$ and $\hat{S}_2 > 0$. Given this, we can determine that $M_{US(1,t_0)} * \hat{S}_1 < 0$, and that $E_{US(1)} < 0$. Since $M_{US(1,t_0)} > M_{US(2,t_0)}$, we can also say that $|E_{US(1)}| > E_{US(2)}$. We can unequivocally state, therefore, that $N_{US} < 0$. This shows that the U.S. aggregate market share falls even while the U.S. retains constant market share in individual markets. In this case, the structural effect weights the low market share more heavily.

The *structural effect* on aggregate market share is determined by changes in the structural shares. Individual market share changes also affect the aggregate market share. We refer to these latter changes as the *performance effect*. We now decompose the change in the aggregate market share into structure and performance. Recall that the observed market share is:

$$M_{US(t)} = \sum_{i \in IMKT} M_{US(i,t)} S_{(i,t)} .$$

We calculate two aggregate market shares for the hypothetical conditions where the United States retains constant individual market shares over all time periods. A single period t_b must be chosen since the change in structure and performance is relative to a base period. We first calculate the fixed-performance market share $M_{USfp(t)}$:

$$M_{USfp(t)} = \sum_{i \in IMKT} M_{US(i,t_b)} S_{(i,t)} .$$

The fixed-performance share incorporates individual base-period market shares $M_{US(i,t_b)}$. This hypothetical share tells us what the U.S. aggregate market share would have been had the United States held its base-period shares in every individual market.

Next we show the aggregate base-period share, $M_{USb(t)}$, in which *both* individual market shares and structural shares are fixed at their base-period level:

$$M_{USb(t)} = \sum_{i \in IMKT} M_{US(i,t_b)} S_{(i,t_b)} .$$

If the fixed-performance share deviates from the base-period share, it is entirely attributable to the change in structure, $SE_{US(t)}$. If the fixed-performance share differs from the observed share, it is entirely due to performance, $PE_{US(t)}$. These relationships are illustrated as follows:

$$SE_{US(t)} = M_{USfp(t)} - M_{USb(t)}$$

$$PE_{US(t)} = M_{US(t)} - M_{USfp(t)} .$$

The total effect, $TE_{US(t)}$, or actual change in the U.S. aggregate market share, is simply the sum of the structural and performance effects:

$$TE_{US(t)} = SE_{US(t)} - PE_{US(t)} .$$

In the next section of the report, we apply the TSA method outlined here to United Nations (UN) bilateral trade data. Empirically TSA is used to explain how individual markets affect the U.S. aggregate market share. It is also used to isolate the structural from the performance effect.

Empirical Analysis

There are many definitions of the U.S. export market. We identify 16 different definitions for the U.S. agricultural sector in table 1.[2] This proliferation is attributable to different commodity and country sets. The use of inconsistent definitions creates problems for analysts and policymakers alike. Defining the relevant market is important.

Definitional Issues

A problem with using a definition of the agricultural export market that includes all related agricultural items is that the United States does not compete in all markets. For instance, the United States does not produce and, therefore, does not compete in the coffee or natural rubber markets.[3] Since we are interested in U.S. export performance, our definition of the world agricultural market includes only those goods that the United States exports.

[2]In this report, we present market-share statistics based upon two of the commonly used definitions of the foreign market: B2—the foreign-competitive-with-intra-EU-trade market and B4—the foreign-competitive-without-intra-EU-trade market.

[3]Consider, for example, the case of an increase in the world price of green coffee, all else held equal, a commodity the United States does not export. This price increase would have lowered conventionally defined U.S. aggregate market shares, leaving the impression that U.S. agricultural export performance had deteriorated. But, nothing of relevance changed in terms of actual U.S. performance.

A second definitional problem lies with the importer set. Typically, U.S. imports are included in the world total. This imparts a downward bias when evaluating the United States as a supplier of goods to the foreign market. This bias increases when U.S. agricultural imports grow faster than world agricultural trade.

Another problem is whether intra-EU trade should be excluded from the U.S. export market. The decision on this issue depends on the purpose of the analysis. One could argue that intra-EU trade is not part of the world market because of the current preferential treatment among EU members. There is no doubt that the EU has moved towards integration. Our purpose is to examine U.S. agricultural export performance in its historical context (1962-present). The size of intra-EU trade has been an important factor affecting U.S. exports in this timeframe. We, therefore, make use of two foreign-market definitions, one that includes and another that excludes intra-EU trade.

Figure 1 shows the two U.S. market shares for the sector—types B2 and B4. Both of these market shares display similar patterns of variation through time, though the gap between the two has widened. The share excluding intra-EU trade is, on average, 7.2 percentage points higher than the share including intra-EU trade. By 1994, the U.S. agricultural market share that includes intra-EU trade was 14.6 percent, 8.9 percentage points lower than the share excluding intra-EU trade.

We break up total U.S. agricultural trade into three subsectors: bulk commodities, semi-processed intermediates, and consumer-oriented products.[4] Figure 2 shows the U.S. aggregate market shares and the real (1992) value of U.S. exports for the three subsectors. Longrun market-share trends for bulk commodities and semi-processed intermediates, like that typifying the sector as a whole, are downward sloping. By contrast, the post-1974 market-share trend for consumer-oriented products is upward sloping and mirrors spectacular increases in sales, particularly after 1987.

Table 1—Sixteen different definitions of the U.S. agricultural export market

A1	A2	A3	A4
B1	B2	B3	B4
C1	C2	C3	C4
D1	D2	D3	D4

A: All USDA commodities.
B: All USDA competitive commodities.
C: All FAO (Food and Agriculture Organization) commodities.
D: All FAO competitive commodities.
1: All country trade.
2: All country trade except U.S. imports.
3: All country trade except intra-EU trade.
4: All country trade except U.S. imports and intra-EU trade.

Analyses of Historical Periods

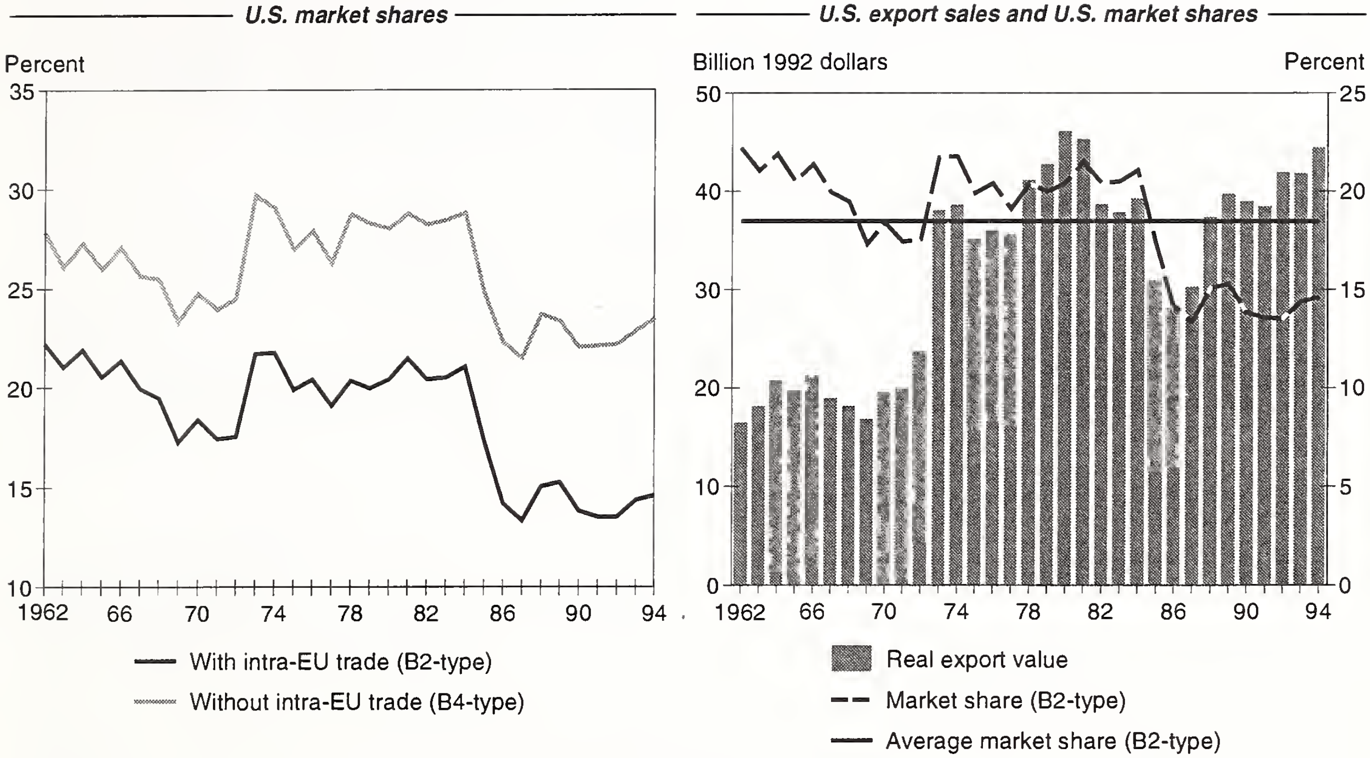
The United States held, on average, 18.5 percent of the foreign agricultural market between 1962 and 1994 (fig. 1). U.S. agricultural exports increased in real (1992 dollars) terms, rising from $16.5 to $44.5 billion during this period. Despite this almost threefold increase, the U.S. agricultural market share fell. From 1962, it declined 7.6 percentage points to 14.6 percent in 1994. This decline in the U.S. share belies variations occurring within the past 33 years. Four distinct trends can be identified: the 1962-72 "early period," the 1972-81 "expansion period," the 1981-87 "contraction period," and the 1987-94 "transition period."

We now seek explanations for movements in overall U.S. agricultural market shares during these four periods and for the entire 1962-94 period. We integrate insight obtained from TSA with conventional explanations largely based upon the impact of macroeconomic shocks and shifts in economic policies. TSA enables us to identify the evolving structure of the world agricultural market and changing U.S. export performance in individual, disaggregated markets.

We examine U.S. export performance in the overall foreign agricultural market from three vantage points: (1) the *level* perspectives of U.S. exports and market shares through time (fig. 1); (2) changes in the U.S. aggregate market share attributable to changes in *structure and performance* (fig. 3); and, finally, (3) *impacts*

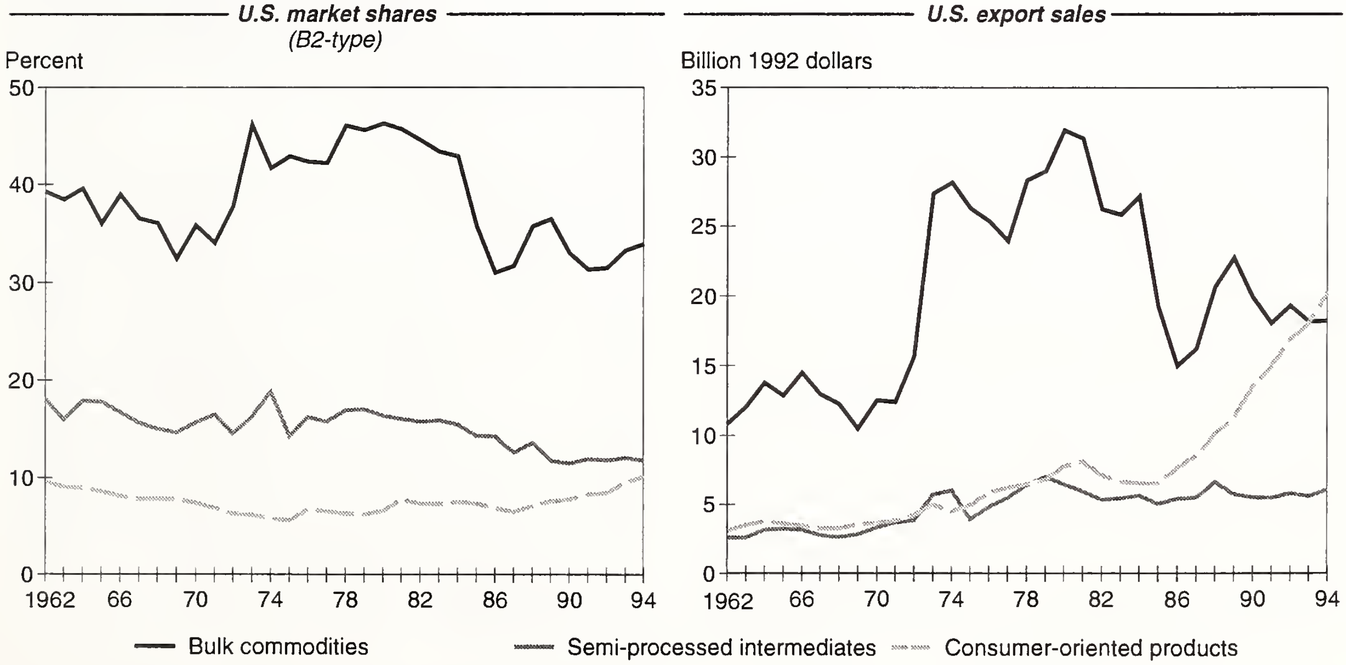
[4] *Bulk commodities* consist of unpackaged goods that require little handling and are comparatively inexpensive to ship. In most cases, these commodities are primary materials, used in the manufacture of semi-processed intermediates. Competitive bulk commodities include wheat, corn, other grains, oilseeds, cotton, and tobacco. *Semi-processed intermediates* consist of goods that are derived from bulk commodities and that are not primarily used for immediate human consumption. Competitive semi-processed intermediates include live animals, hides & skins, other animal material, oilcake & meal, vegetable oils, and other plants & materials. *Consumer-oriented products* consist of horticultural and other fresh produce that can be consumed without significant post-harvest processing. They often require special handling and may incorporate such relatively simple value-added activity as containerization and refrigeration. They also encompass consumer-ready products that have been significantly transformed, in terms of processing or packaging, from their farmgate, primitive state. Competitive consumer-oriented products include beef, poultry, pork, other meat, dairy, apples & grapes, citrus, other fruit & nuts, vegetables, animal & pet food, sugar & products, beer & wine, nonalcoholic beverages, and processed foods.

Figure 1
U.S. agricultural sector trade



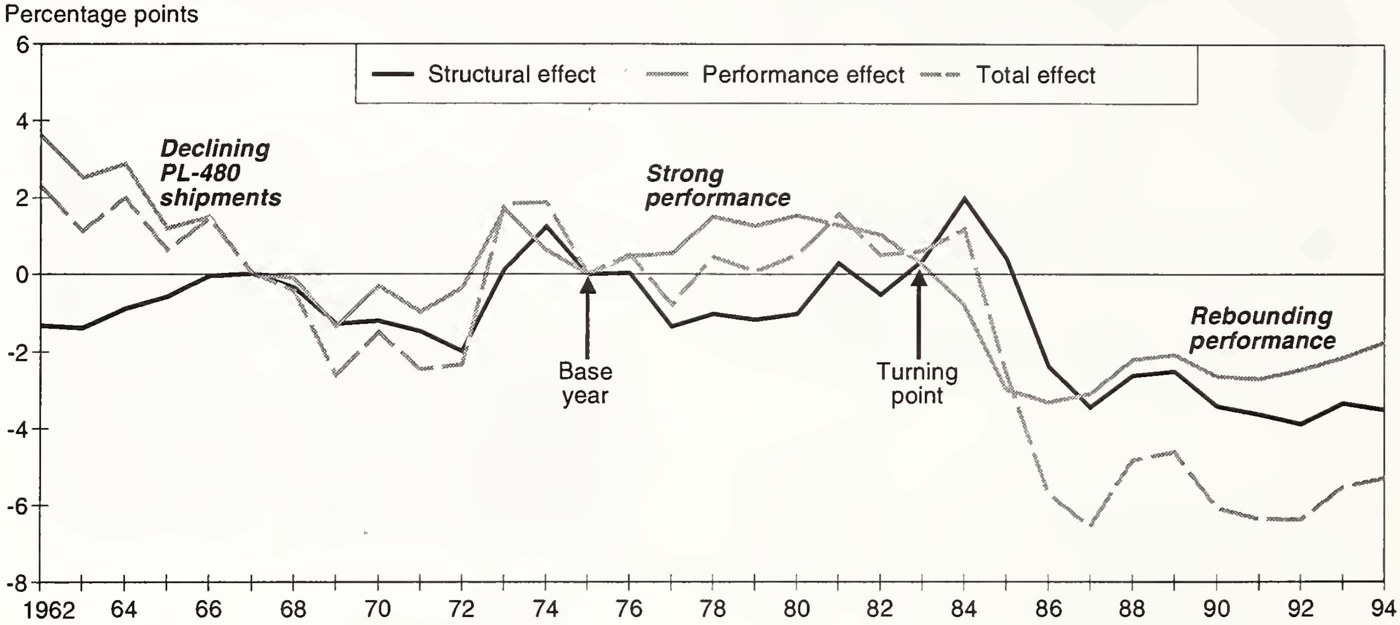
Source: Economic Research Service compiled from U.N. bilateral trade data.

Figure 2
U.S. agricultural subsector trade



Source: Economic Research Service compiled from U.N. bilateral trade data.

Figure 3
Structure and performance effects on the U.S. agricultural market share



Note: See TSA methodology where TE = SE + PE, SE = M_{fp} - M_b , and PE = M - M_{fp}.

Source: Economic Research Service compiled from U.N. bilateral trade data.

of individual markets by time interval (table 2).[5] These individual markets are grouped into 27 agricultural commodities and 14 foreign destinations.

The structural effects reveal what the U.S. aggregate market share would have been had the United States retained constant market shares in all individual markets throughout the entire period. The U.S. aggregate market share would have fallen between 1984 and 1987 even if the United States had retained constant market shares in each individual market (fig. 3). This points to limitations using the aggregate market share as an indicator of U.S. export performance.

The Early Period

During the early period, the overall U.S. agricultural market share decreased, falling from a high of 22.2 percent in 1962 to 17.6 in 1972 (fig. 1). This decline was commensurate with the decrease in the proportion of U.S. program-based exports to total agricultural sales. The ratio of PL-480 and credit-guaranteed exports to total foreign sales fell 40 percent, dropping from 29.7 percent in 1962 to 17.3 in 1972 (Ackerman, Smith, and Suarez). The decline in program-based exports accounted for a large proportion of the fall in U.S. market shares for bulk commodities (fig. 2). Foreign suppliers became more price competitive when the United States withdrew food aid. Figure 3 shows that the negative performance effect far outweighed the structural effect in this early period.

Most of the 4.64-percentage-point decline in the overall U.S. agricultural market share between 1962 and 1972 was attributable to the bulk commodities (table 2).[6] Losses in U.S. bulk-commodity market shares had an adverse impact on the overall U.S. share, with oilseeds being the notable exception. The U.S. market share for cotton, wheat, corn, and other grains declined 12.8, 6.1, 5.5, and 4.7 percent, respectively. Structural change also had a negative effect. The declining importance of cotton, wheat, and other grains in world agricultural trade combined with losses of U.S. market shares in these commodities explains why these three commodities took 3.7 percentage points (80 percent of the overall decline) from the U.S. aggregate market share during the early period.

[5]In table 3, we identified the top 20 country-commodity markets that had the largest effect on the change in the U.S. aggregate market share between 1981-87.

[6]Sixty-four percent of the overall decline was attributable to the bulk commodities, 24 percent to the consumer-oriented products, and 12 percent to the semi-processed subsector.

Table 2—Decomposition of changes in U.S. aggregate market shares, by individual markets

Markets	1962-72	1972-81	1981-87	1987-94	1962-94
Commodity			*Percentage points*		
Processed Foods	0.01	-0.04	0.03	0.61	0.61
Beef	0.05	0.06	0.22	0.37	0.70
Vegetables	-0.24	0.29	-0.30	0.35	0.10
Poultry	-0.25	0.16	-0.05	0.27	0.13
Sugar & Products	-0.05	-0.02	0.01	0.22	0.16
Other Fruits & Nut	-0.26	0.05	0.06	0.18	0.03
Non-alcoholic Beverages	-0.06	0.01	-0.04	0.17	0.08
Dairy	-0.28	-0.12	-0.10	0.14	-0.36
Apples & Grapes	-0.04	0.03	-0.04	0.12	0.07
Beer & Wine	0.00	0.03	0.01	0.12	0.17
Animal & Pet Food	-0.02	0.29	0.06	0.12	0.45
Vegetable Oils	-0.14	0.00	-0.24	0.10	-0.28
Pig Meat	0.03	0.03	-0.06	0.10	0.11
Other Meat	0.00	0.03	-0.02	0.09	0.11
Cotton	-1.51	0.21	-0.40	0.08	-1.62
Semi-processed Grains	-0.77	0.03	-0.05	0.07	-0.71
Other Plant Material	0.07	-0.05	0.12	0.03	0.17
Other Animal Material	-0.39	0.05	-0.18	0.01	-0.52
Other Grains	-0.65	0.25	-0.95	-0.01	-1.36
Live Animals	0.07	-0.03	0.05	-0.01	0.08
Citrus	0.01	-0.05	0.02	-0.03	-0.05
Tobacco	-0.48	-0.46	-0.23	-0.10	-1.27
Wheat	-1.50	1.35	-2.49	-0.17	-2.81
Maize	-0.06	1.65	-2.41	-0.22	-1.05
Oil Cake & Meal	0.39	0.05	-0.27	-0.27	-0.09
Hides & Skins	0.18	-0.14	0.30	-0.34	0.01
Oilseeds	1.22	0.26	-1.19	-0.75	-0.46
Net effect[1]	**-4.64**	**3.93**	**-8.13**	**1.26**	**-7.59**
Destination					
Mexico	0.06	0.82	-0.62	0.95	1.21
Canada	-0.78	-0.59	-0.16	0.94	-0.59
Japan	0.61	0.67	-0.67	0.29	0.90
ASEAN[2]	0.18	-0.38	-0.21	0.23	-0.18
China	0.12	0.91	-0.86	0.19	0.35
East Asian NIC's[3]	0.29	0.71	-0.15	0.16	1.00
Oceania	-0.11	0.02	-0.02	0.07	-0.04
Latin America[4]	-0.34	0.64	-0.79	0.03	-0.45
South & Northeast Asia	-1.10	-0.28	-0.19	0.00	-1.57
SubSaharan Africa	-0.19	0.38	-0.41	-0.02	-0.23
Other Europe	-0.47	0.21	-0.68	-0.09	-1.02
Former Soviet Union	0.77	0.04	-0.42	-0.12	0.27
Middle East & North Africa	-1.37	0.77	-0.28	-0.23	-1.11
EU12	-2.33	0.01	-2.67	-1.15	-6.13
Net effect[1]	**-4.64**	**3.93**	**-8.13**	**1.26**	**-7.59**

[1]Change in aggregate U.S. agricultural-market share. Net changes are calculated by the TSA method: $N_{US(t_I)} = \sum_{i \in IMKT} E_{US(i,t_I)}$, where i = individual markets and I = time intervals. [2]ASEAN = Association of SouthEast Asian Nations. [3]NIC's = Newly industrializing countries. [4]Excludes Mexico.

Table 2 shows that the developing nations in South and Northeast Asia, Middle East & North Africa, SubSaharan Africa, and Latin America took away 3.0 percentage points from the overall U.S. agricultural market share.[7] In addition, the formation of the European Common Agricultural Policy (CAP) contributed to the 1962-72 decline in the U.S. share. The U.S. agricultural market share fell 3.2 percent in the European Community (EC); and the EC market took 2.3 percentage points from the overall U.S. share.

Countering these negative influences were positive contributions provided by the Former Soviet Union (FSU), Japan, the newly industrializing countries in East Asia (East Asian NIC's), Association of South East Asian Nations (ASEAN), and Mexico—all of which added to the overall U.S. share between 1962 and 1972. The development of the FSU market was particularly noteworthy. The FSU increased its agricultural imports rapidly, at a 24.4 percent annual rate between 1962 and 1972; and the United States increased its share of this growth market by 23.2 percentage points.

The Expansion Period

The 1972-81 data points depicting U.S. agricultural market shares in figure 1 look like outliers in contrast to the 1962-94 trend. What are the explanations for the boom period and its sudden demise?

During the early 1970's, a number of shocks occurred in rapid succession, most of which were favorable to U.S. agriculture. The world experienced a food shortage beginning in 1973. Global grain production had declined 3.5 percent from the previous year. This decline coincided with a policy shift by the Soviet Union away from self-sufficiency in grain. To make up for internal production shortfall, the Soviet Union first entered world markets as a major grain importer in 1972. As a result of the Soviet entry, "there was a 50-percent increase in international trade in wheat and coarse grains between 1971-72 and 1972-73" (Hathaway and Rossmiller).

The United States was well positioned to take advantage of the increase in foreign agricultural trade because of its bulk-grain reserves. In just one year, between 1972 and 1973, the real (1992) value of U.S. agricultural exports increased 1.6 times to $38.1 billion, and the U.S. aggregate market share jumped 4.2 percentage points to 21.7 percent. Throughout the rest of the expansion period, the U.S. share averaged 20.4 percent, almost 2 percentage points above its 33-year average.

[7]"Latin America" excludes Mexico.

The impact on world agricultural markets of global macroeconomic policies following the 1973-74 oil crisis shock largely explain why the United States was able to sustain above-average export performance throughout the remainder of the expansion period. To cope with the sudden rise in energy prices, monetary authorities in the major industrialized countries increased the supply of money. Central bankers recycled petrodollars to countries in the Third World, providing them with the financial means to purchase large quantities of grain on the open market. The United States, the world's residual supplier of bulk grains, was able to satisfy the growing developing country demand for agricultural imports.

Table 2 confirms that the developing country markets were, in fact, responsible for much of the rise in the overall U.S. agricultural market share between 1972 and 1981. Developing countries in SubSaharan Africa, Latin America (including Mexico), East Asian NIC's, Middle East & North Africa, and China conferred 4.2 percentage points to the increase in the U.S. share. Mexico and other oil-exporting countries in the Middle East had abundant foreign exchange with which to purchase grain on the open market. However, China, with its large population and more open commercial policy, had the biggest impact of any single destination market, contributing almost 1 percentage point to the overall U.S. share. Japan, Europe, and the FSU also had positive impacts.

Canada, ASEAN, and Other Asia each had a negative influence on the overall U.S. share during the 1972-81 expansion period. The United States lost agricultural market shares in these markets. It also lost market shares in Mexico and the Middle East & North Africa. However, agricultural import growth was greater in Mexico and the Middle East & North Africa than in any other destination markets. This rapid growth explains why both Mexico and the Middle East & North Africa contributed positively to the increase in the overall U.S. share between 1972 and 1981.

The information in table 2 also confirms the fact that bulk commodities, as opposed to semi-processed and consumer-oriented products, explained most of the rise in the overall U.S. agricultural market share during the 1972-81 expansion period.[8] All bulk commodities, with the exception of tobacco, contributed positively to the U.S. share. Collectively, they conferred 3.25 per-

[8]The bulk commodities contributed 83 percent of the rise in the overall U.S. agricultural market share during the expansion period. Consumer-oriented products also contributed to the rise, with vegetables and animal & pet food making the largest contributions. By contrast, semi-processed goods were responsible for a tenth of 1 percent decline in the overall share.

centage points. Corn and wheat had the greatest impact, contributing 1.7 and 1.4 percentage points respectively.

During the expansion period, the United States had high and growing market shares in the bulk commodities and these commodities were the agricultural goods that experienced the fastest growth in the foreign market. This fortuitous situation led to higher overall U.S. agricultural market shares, consistent with what TSA would predict. The positive structural and performance effects reinforced each other.

The Contraction Period

During the 1981-87 contraction period, the real value of U.S. agricultural exports fell, sending the domestic farm economy into a severe depression (fig. 1). The overall U.S. agricultural market share dropped by a third, declining from 21.5 percent in 1981 to 13.4 percent in 1987. The sudden and sharp contraction caught analysts, policymakers, and farmers by surprise.[9] In the mid-1970's, most everyone had been bullish about the prospects for continued export growth of U.S. agriculture (Hathaway and Rossmiller).

Several macroeconomic events worked against U.S. agriculture during the contraction period. Adverse macroeconomic conditions—most notably the global recession beginning in 1981, increases in the value of the U.S. dollar in foreign currency markets, and tight global monetary policies following the second oil crisis in 1979—contributed to the loss of U.S. aggregate market share. Saddled with debt-service payments, the developing countries could not afford the luxury of using scarce foreign exchange to pay for large amounts of agricultural imports.

But, the macro economy was not the only source of influence. Towards the end of the previous "expansion" period, questionable agricultural policy decisions were made. Beginning in 1979, domestic farm policies distorted market signals. U.S. policymakers substantially increased both loan rates and target prices because of concern about the potentially negative impact that the Soviet grain embargo would have on domestic farm income (Bookins). The loan rate for wheat, for example, increased 36 percent in a single year, rising from $2.35 in 1979 to $3.20 per bushel in 1980. Shortly thereafter, the 1981 Agricultural and Food Act legislated yearly increases in support prices. Both of these farm policy decisions effectively priced U.S. bulk commodities out of world markets. The United States lost market share in all bulk commodities despite accumulating large CCC stocks during the early 1980's.

Table 2 shows that 94 percent of the 8.1-percentage-point drop in the overall U.S. agricultural market share between 1981 and 1987 was attributable to bulk commodities directly affected by domestic farm policies.[10] The withdrawal of the United States from world commodity markets encouraged competitors to increase their production. Increased foreign production exerted, in turn, downward pressure on commodity prices, exacerbating the problem the United States was experiencing of being price competitive.

Not only did the United States lose market shares in each bulk commodity market, but imports of every bulk commodity contracted in the world market between 1981 and 1987.[11] Positive growth, by contrast, characterized all other agricultural goods with the exception of sugar & products. During the contraction period, the structure of foreign agricultural trade moved sharply away from bulk commodities.

None of the 14 destination markets contributed positively to the overall U.S. market share between 1981 and 1987. U.S. agricultural market shares decreased in most destination markets, with the FSU, Mexico, and the Middle East & North Africa being the only exceptions. However, world agricultural exports to these three markets declined. Negative import growth prevented the FSU, Mexico, and the Middle East & North Africa from making a positive contribution to the overall U.S. agricultural market share.

The EU market presented the biggest problem. By 1980, the EU had achieved, under the CAP protective umbrella, self-sufficiency in many commodities that it had previously imported. Examples include grain, dairy, beef, and poultry. TSA-based analysis quantifies the direct impact on the overall U.S. agricultural market share. The EU market alone accounted for a 2.7-per-

[9]ERS grain projections made at the end of 1974 (as well as those made by analysts at Food and Agriculture Organization and Iowa State University), indicated that the developing countries would continue to be a growth market. These projections missed the mark—largely because the assumptions made did not conform with later events. The ERS study, for example, assumed either that there would be sufficient foreign exchange to finance the rise in developing-country imports or that there would be sufficient access to concessional sales. In fact, the developing countries experienced foreign exchange constraints due to debt accumulation; and the real value of food-aid shipments continued to fall.

[10]The consumer-oriented and the semi-processed subsectors each contributed 3 percentage points to the overall decline.

[11]The United States lost market share in all agricultural-good markets during the contraction period, except beef, live animals, hides & skins, and sugar & products.

centage-point (a third of the total) drop in the 1981-87 share decline (table 2).[12] But the negative impact of the CAP was greater than its direct effect on the EU import market. After reaching self-sufficiency in various commodity markets, the EU exported its surplus production. U.S. agricultural producers were pushed out of extra-EU foreign markets by the export restitutions sanctioned by the CAP.

Using TSA, we are able to pinpoint the specific country-commodity markets that had the largest impact on the change in the U.S. aggregate market share. Table 3 shows the 20 specific import markets having the biggest influence. All but one of these markets had a negative impact on the 1981-87 change in the U.S. aggregate market share.[13] U.S. losses in the EU maize and oilseed markets had the largest negative impact, each subtracting 1 percentage point from the overall U.S. agricultural market share between 1981 and 1987. The U.S. share of the EU maize and oilseed markets fell 54 and 29 percent, respectively.

We have also identified in table 3 the biggest U.S. competitors in each of the 20 specific markets. France, the largest competitor in the EU maize and oilseed markets, increased its shares in these markets 44 and 18 points, respectively, between 1981 and 1987. Other important competitors who prevailed over the United States in the top markets during this period include South African suppliers of maize to Japan; Pakistani suppliers of cotton to China; Spanish suppliers of vegetables to Mexico; Thai suppliers of other grains to SubSaharan Africa; and Canadian suppliers of wheat to China, Other Latin America, FSU, and Japan.

The precipitous 1981-87 decline in the overall U.S. agricultural market share occurred in large part because the commodity structure of world trade moved in favor of agricultural products in which the United States had relatively low market shares, namely, towards consumer-

[12] EU imports grew 4.5 percent annually between 1981 and 1987. Meanwhile, the U.S. share of the EU agricultural market fell 7.6 percentage points.

[13] The Japanese beef market, which made a positive contribution to the U.S. aggregate-market share, was the notable exception. The U.S. share of the Japanese beef market rose 22 percentage points between 1981 and 1987.

Table 3—U.S. and competitor performance in top 20 U.S. markets, 1981-87

Country/ Commodity market	Top competitor	U.S. market share	Competitor's market share	Effect on U.S. aggregate market share
		Percent change	*Percent change*	*Percentage points*
EU12/Maize	France	-53.60	44.33	-1.03
EU12/Oilseeds	France	-28.42	17.59	-0.97
China/Wheat	Canada	-47.09	19.07	-0.60
Latin America[1]/Wheat	Canada	-37.44	14.92	-0.55
Japan/Maize	South America	-23.98	11.04	-0.44
Other Europe/Maize	France	-56.20	15.04	-0.38
East Asian NIC's[2]/Hides & Skins	Canada	-2.08	2.73	0.29
East Asian NIC's[2]/Other Grains	Thailand	-23.68	30.21	-0.29
EU12/Oilcake & Meal	Brazil	-9.72	-2.77	-0.28
China/Cotton	Pakistan	-47.80	20.20	-0.24
Former Soviet Union/Maize	China	20.15	22.48	-0.23
Former Soviet Union/Wheat	Canada	-0.96	4.69	-0.22
EU12/Wheat	France	-15.89	13.85	-0.21
Japan/Oilseeds	Canada	-7.78	0.41	-0.20
Japan/Beef	Australia	21.91	-19.95	0.18
Mexico/Vegetables	Spain	-9.43	4.06	-0.17
Mexico/Other Grains	Argentina	27.23	-20.98	-0.16
SubSaharan Africa/Wheat	France	-25.96	4.49	-0.16
Japan/Wheat	Canada	-3.71	1.78	-0.15
SubSaharan Africa/Other Grains	Thailand	-15.39	23.63	-0.15
Top 20 total				-5.95

[1]Excludes Mexico. [2]NIC's = Newly industrializing countries.

oriented products. This situation was a sharp reversal from the previous 1972-81 expansion period (fig. 3). The contraction-period decline was also attributable to the displacement of U.S. sales by the EU in important wheat, maize, and oilseed commodity markets (table 3). EU integration, induced by the CAP, altered the market structure of world agricultural trade, lowering the U.S. aggregate market share and curtailing its rise in subsequent years.

The Transition Period

The overall U.S. agricultural market share stopped its precipitous decline in 1987 and then began to rise (fig. 1). It rose modestly, gaining 1.3 percentage points between 1987 and 1994 (table 2). By 1994, the real value of U.S. agricultural exports reached $44.5 billion, having almost rebounded to its previous 1980 high of $46.2 billion.

Changes in farm legislation helped reverse the declining real-value and market-share trends of the previous period. The Food Security Act of 1985 was aimed at restoring U.S. competitiveness in agriculture. Loan rates were lowered, the Export Enhancement Program was initiated, and the Conservation Reserve Program took land out of production. The Food, Agriculture, Conservation and Trade (FACT) Act of 1990 lowered support prices further. It also introduced the concept of flexibility, allowing farmers increased discretion about what was planted on program-payment acres.

Clearly, changes in 1985 and 1990 farm legislation helped stem the loss in U.S. sales of bulk commodities. The United States increased its market share in all bulk commodities except oilseeds between 1987 and 1994. However, despite these increases, cotton was the only bulk commodity that contributed positively to the modest increase in the U.S. aggregate market share between 1987 and 1994 (table 2). The reason that improved U.S. performance in bulk-commodity markets did not translate into a higher U.S. aggregate share is that the importance of bulk commodities in the foreign agricultural market continued to decline.

Consumer-oriented products, for which the United States has low market shares, became increasingly important in the foreign agricultural market. Between 1987 and 1994, foreign import growth of all 13 consumer-oriented products grew more rapidly than in the previous contraction period. Growth was particularly rapid for poultry, processed foods, and nonalcoholic beverages—each of which grew more than 10 percent per year between 1987 and 1994. Moreover, U.S. market shares increased in all consumer-oriented product markets, except dairy. Collectively, the consumer-oriented products contributed 2.7 percentage points to the overall U.S. agricultural market share.[14] Table 2 shows that processed foods contributed most to the increase in the overall U.S. share, adding 0.6 percentage point. Collectively, beef, vegetables, and poultry added another percentage point.

The following destination markets contributed positively to the overall U.S. agricultural market share between 1987 and 1994: Mexico, Canada, Japan, ASEAN, China, East Asian NIC's, Other Europe, and Latin America.[15] Neighboring Mexico and Canada had the largest impacts, each having contributed a percentage point to the overall U.S. share. Meanwhile, the CAP continued to have a negative impact. The U.S. share of the EU agricultural market declined 1.9 percentage points between 1987 and 1994. This loss explains why the EU market took 1.1 percentage points from the overall U.S. share during the transition period.

U.S. market shares rose in 24 of the 27 agricultural commodity markets between 1987 and 1994. Yet, this strong performance was not fully reflected in the overall U.S. agricultural market share which rose modestly. Bulk commodities contributed negatively to the U.S. share during this period even though U.S. performance in these individual markets increased. The reason for the small increase in the overall U.S. share was that consumer-oriented products, in which the United States had low (albeit rising) market shares, grew faster in the foreign market than did the bulk commodities. This finding reinforces our contention that the aggregate market share is not an indicator of performance.

The 33-Year Summary

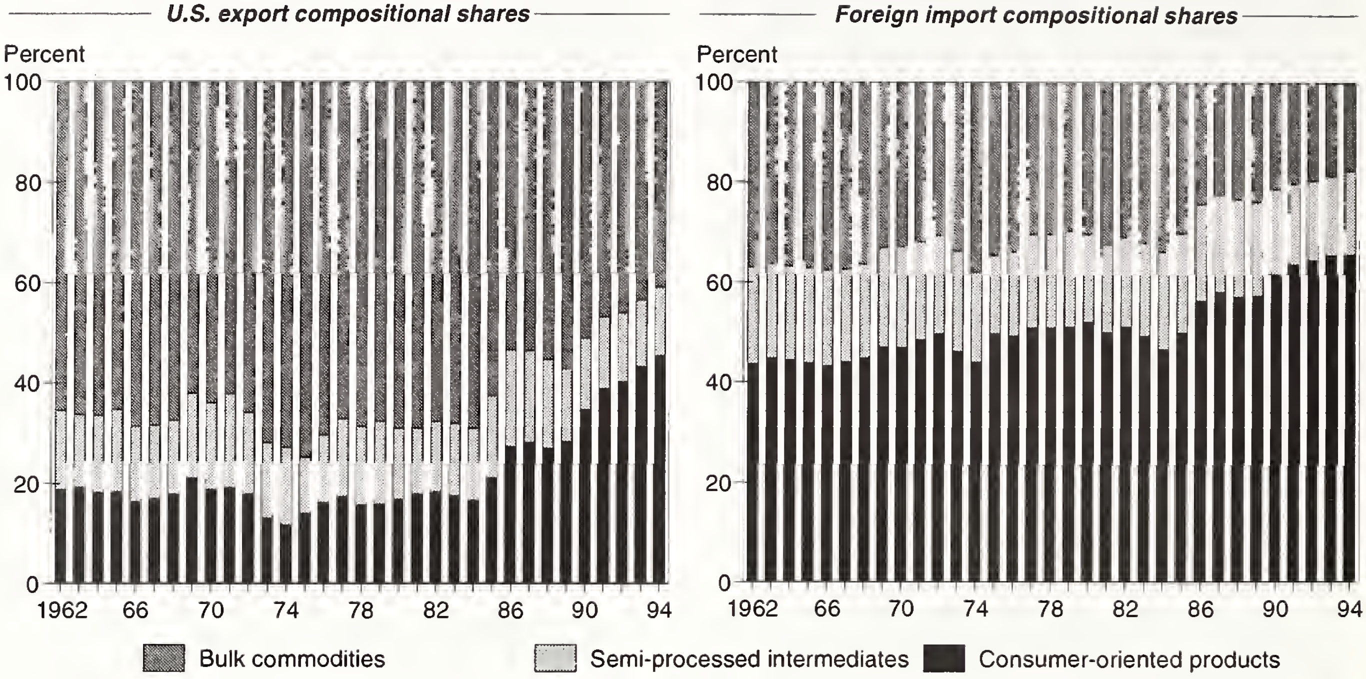
The pattern of the variation in U.S. bulk-commodity exports is similar to that of U.S. total agriculture (figs. 1 and 2). The similarity is explained by the dominance of bulk goods in the composition of U.S. agricultural exports. Bulk exports have averaged about 60 percent of total U.S. agricultural sales throughout the period for which we have data (fig. 4). The importance of bulk commodities in the foreign market has, however, experienced a relative decline, with a particularly sharp decline in its share characterizing recent years (fig. 4). This structural change had the effect of lowering the overall U.S. agricultural market share.

Changes in overall U.S. agricultural market shares generally move in tandem with shifts occurring in bulk-commodity market shares. The overall U.S. share

[14]By contrast, the bulk and semi-processed subsectors lowered the aggregate U.S. agricultural market share by 1.2 and 0.2 percentage points, respectively, between 1987 and 1994.

[15]"Latin America" excludes Mexico.

Figure 4
Structural change within agricultural trade



Source: Economic Research Service compiled from U.N. bilateral trade data.

declined in the 1962-72 and 1981-87 periods and rose in the 1972-81 period commensurate with changes in U.S. market shares for the individual bulk commodities. In the more recent 1987-94 transition period, the United States increased its market shares in all bulk commodities except oilseeds (table 2). However, none of the bulk commodities had a net positive impact on the U.S. aggregate share during this period because of structural change in the world market, which continued its move away from bulk commodities.

The overall U.S. agricultural market share does not mirror U.S. agricultural export performance. In the 1987-94 period, U.S. performance improved throughout the agricultural sector, as is clearly shown by rapid U.S. export growth and market-share increases in most commodity markets. Of particular interest during this period was the dramatic rise in the real value of U.S. consumer-oriented-product exports (fig. 3). As a consequence, the composition of U.S. agricultural exports shifted away from bulk commodities (fig. 4).

Conclusions

Market shares are frequently cited statistics found in USDA and other publications. In 1994, the U.S. agricultural market share was 6.9 percentage points below the 1981 level, raising questions about whether U.S. agriculture would ever be able to regain lost ground. We contend that concern about the decline in the U.S. market share for the sector as a whole is misplaced.

Changes in the aggregate U.S. agricultural market share reflect not only shifts in performance in all specific markets (i.e., individual market shares) but also shifts in the direction and/or commodity structure of world agricultural trade (i.e., compositional shares). Publication of U.S. aggregate market shares needs to be accompanied by statistics about the changing structure of world trade to draw correct inferences.

To properly evaluate U.S. agricultural export performance, attention must be given to how the sector responds

to individual markets. Treatment of agriculture as a single market provides little information about export performance. The TSA method is capable of uncovering the important growth markets within the overall foreign agricultural market. In recent years, faster growth took place in consumer-oriented-product markets in North America and in East Asia. While this shift did not help the U.S. aggregate market share, total U.S. agricultural exports, and in particular exports of consumer-oriented products, accelerated.

The aggregate market share can be a good gauge of market saturation. Rapid U.S. export growth accompanied by a stable or falling aggregate market share is a sign of a healthy foreign appetite for U.S. agricultural goods and points to bright export prospects. This was the case for the 1987-94 transition period. On the other hand, a rise in the U.S. aggregate market share accompanied by slow export growth is a sign of a stagnant future. This was the case at the beginning of the contraction period in early 1980's when the U.S. share reached a historical high.

Finally, the TSA method provides us with insight into why the U.S. market share may shift in the future. We know that the United States maintains higher market shares in bulk commodities than in consumer-oriented products. Current estimates show that bulk commodities will have grown faster than consumer-oriented products in world trade in 1995 and 1996. Under this growth condition, we will undoubtedly see the U.S. aggregate share rise. But, consumer-oriented trade is expected to continue to increase its share in world trade in the long run. This means that the U.S. aggregate share will move closer towards the consumer-oriented market share. Unless the U.S. consumer-oriented market share rises above the current aggregate share, the U.S. aggregate share will fall.

References

Ackerman, Karen Z., Mark E. Smith, and Nydia R. Suarez. *Agricultural Export Programs: Background for 1995 Farm Legislation*. FAER-716, June 1995.

Alston, Julian, Colin A. Carter, and Lovell S. Jarvis. "On Japanese Beef Trade Liberalization: It May Not Benefit Americans," *Choices*. 4th Qtr., 1989.

Bookins, Carol. "Carol Bookins on The Embargo Study," *Choices*. 1st Qtr., 1987.

Bredahl, Maury E., Philip C. Abbott, and Michael R. Reed. *Competitiveness of U.S. Agriculture and the Balance of Payments*. CAST Report, 1996.

Coyle, William T., and John Dyck. "On Japanese Beef Trade Liberalization: It Will Benefit American Agriculture," *Choices*. 4th Qtr., 1989.

Daft, Lynn M. "Lynn Daft on the 1985 Farm Bill," *Choices*. Premiere edition, 1986.

de la Garza, E. "Food, Farm and Resource Policy: A Democratic View," *Choices*. 4th Qtr., 1988.

Gehlhar, Mark, Mathew Shane, and Thomas Vollrath. "Growth of Consumer-Oriented Trade: Implications for the U.S. Agricultural Market Share," *Choices*. 3rd Qtr., 1996.

Gehlhar, Mark, and Thomas Vollrath. "Demystifying International Agricultural Trade Statistics." Econ. Res. Serv., U.S. Dept. Agr., forthcoming Technical Bulletin.

Green, Paul B. "Export Subsidies on Value-Added Products: Our Trade Policy Needs Them Too," *Choices*. 2nd Qtr., 1988.

Harkin, Tom. "Agricultural Policy: Time for New Directions," *Choices*. 3rd Qtr., 1987.

Hathaway, Dale E., and George E. Rossmiller. "Policy Errors: They Can't Be Eliminated, But Can They Be Reduced?" *Choices*, 1st Qtr., 1993.

Kurtzig, Michael E., and Shahla Shapouri. "North Africa and Middle East Markets Diversify," *Agricultural Outlook*. AO-224. Econ. Res. Serv., U.S. Dept. Agr., Nov. 1995, pp. 15-19.

Paarlberg, Philip L., Alan J. Webb, and John C. Dunmore. "The U.S. Competitive Position in World Commodity Trade," *Agricultural-Food Policy Review: Commodity Program Perspectives*. AER-530, Econ. Res Serv., U.S. Dept. Agr., July 1985, pp. 93-121.

Pick, Daniel H., Carlos Arnade, and Utpal Vasavada. "Technology Gaps and Trade in Agriculture," *Weltwirtschaftliches Archiv*. Vol. 131, No. 3, 1995, pp. 509-525.

Rhoades, Douglas. "Agricultural Trade-Weighted Exchange Rates Indexes: Revisions." *Agricultural Outlook*. AO-216. Econ. Res. Serv., U.S. Dept. Agr., Mar. 1995, pp. 16-17.

Schumacher, August. "Building Prosperity with U.S. Trade Partners." *Agricultural Outlook*, AO-228. Econ. Res. Serv., U.S. Dept. Agr., Apr. 1996, pp. 10-11.

U.S. Department of Agriculture. Economic Research Service. *NAFTA*. International Agriculture and Trade Reports. Situation and Outlook Series, WRS-95-2, May 1995.

U.S. Department of Agriculture. Economic Research Service. *The World Food Situation and Prospects to 1985*. FAER-98, Dec. 1974.

Appendix table—Decomposition of changes in U.S. aggregate market shares excluding intra-EU trade, by individual markets

Markets	1962-72	1972-81	1981-87	1987-94	1962-94
Commodity			*Percentage points*		
Processed Foods	0.07	-0.08	0.15	0.99	1.13
Beef	0.08	0.08	0.39	0.59	1.14
Vegetables	-0.24	0.37	-0.30	0.56	0.39
Poultry	-0.30	0.21	-0.02	0.44	0.33
Sugar & Products	-0.05	-0.03	0.03	0.35	0.30
Other Fruits & Nut	-0.25	0.04	0.24	0.29	0.32
Non-alcoholic Beverages	-0.06	0.01	-0.02	0.28	0.20
Dairy	-0.31	-0.17	-0.11	0.22	-0.38
Apples & Grapes	-0.04	0.03	-0.02	0.20	0.16
Beer & Wine	0.00	0.04	0.03	0.19	0.27
Animal & Pet Food	0.00	0.38	0.22	0.19	0.78
Pig Meat	0.05	0.04	-0.06	0.16	0.19
Vegetable Oils	-0.10	-0.03	-0.26	0.16	-0.22
Other Meat	0.03	0.03	0.04	0.15	0.26
Cotton	-1.75	0.22	-0.33	0.13	-1.72
Semi-processed Grains	-0.93	0.02	0.00	0.12	-0.79
Other Plant Material	0.14	-0.09	0.27	0.05	0.36
Other Animal Material	-0.42	0.03	-0.15	0.01	-0.53
Other Grains	-0.63	0.26	-1.11	-0.02	-1.50
Live Animals	0.11	-0.04	0.12	-0.02	0.17
Citrus	0.05	-0.08	0.09	-0.04	0.01
Tobacco	-0.42	-0.68	-0.17	-0.16	-1.44
Wheat	-1.51	1.67	-2.95	-0.28	-3.07
Maize	0.25	2.08	-2.80	-0.36	-0.83
Oil Cake & Meal	0.61	0.03	-0.20	-0.44	0.00
Hides & Skins	0.32	-0.22	0.63	-0.55	0.18
Oilseeds	1.98	0.17	-0.98	-1.22	-0.05
Net effect[1]	**-3.33**	**4.28**	**-7.28**	**1.98**	**-4.34**
Destination					
Mexico	0.12	1.08	-0.69	1.53	2.05
Canada	-0.75	-0.88	0.00	1.51	-0.12
Japan	1.16	0.75	-0.16	0.46	2.21
ASEAN[2]	0.35	-0.56	-0.22	0.36	-0.06
China	0.16	1.21	-1.11	0.30	0.57
East Asian NIC's[3]	0.54	0.88	0.28	0.25	1.95
Oceania	-0.13	0.03	0.00	0.11	0.01
Latin America[4]	-0.25	0.79	-0.76	0.05	-0.17
South & Northeast Asia	-1.28	-0.42	-0.19	-0.01	-1.90
SubSaharan Africa	-0.20	0.50	-0.49	-0.03	-0.21
Other Europe	-0.47	0.24	-0.82	-0.14	-1.20
Former Soviet Union	1.09	0.01	-0.44	-0.20	0.46
Middle East & North Africa	-1.60	0.98	-0.01	-0.37	-0.99
EU12	-2.07	-0.32	-2.69	-1.86	-6.93
Net effect[1]	**-3.33**	**4.28**	**-7.28**	**1.98**	**-4.34**

[1]Change in aggregate U.S. agricultural-market share. Net changes are calculated by the TSA method: $N_{US(t_I)} = \sum_{i \in IMKT} E_{US(i,t_I)}$, where i = individual markets and I = time intervals. [2]ASEAN = Association of SouthEast Asian Nations. [3]NIC's = Newly industrializing countries. [4]Excludes Mexico.

Stay Up to Date on World Agriculture

Processed Food Trade Concordance. *Research report.* 68 pp. March 1995. **Stock # AH-707. $12.00.** This handbook pairs processed food industries with their corresponding products. These pairings merge the domestic Standard Industrial Classification System for classifying industries and the international Harmonized System for classifying imported and exported products. A concise reference for use in analytical or statistical work that requires identification of the individual products that compose industries' aggregate processed food imports and exports.

Competitiveness and Protection in World Agriculture. *Research report.* 12 pp. July 1989. **Stock # AIB-567. $7.50.** Explores what agricultural competitiveness means by using three different measures: market share, relative export advantage, and revealed competitiveness.

NAFTA: Year Two and Beyond. *Research report.* 121 pp. April 1996. **Stock # NAFTA-5. $12.00.** January 1996 trade data indicate major changes are in store for 1996. The U.S. trade balance with our NAFTA partners switched from a negative $127 million in 1995 to a positive $66 million in 1996, with the balance going positive for Mexico and negative for Canada.

Product Differentiation in Wheat Trade Modeling. *Research report.* 25 pp. June 1995. **Stock # TB-1838. $9.00.** Economic research described in this report indicates that wheat should be differentiated by end use and by country of origin for trade policy modeling. This study uses wheat market information gathered as part of the international component of the grain quality study conducted by ERS to construct world wheat models and to analyze the U.S. Export Enhancement Program.

Factor Intensity of U.S. Agricultural Trade. *Research report.* 36 pp. August 1990. **Stock # AER-637. $9.00.** Reviews the commodity composition of U.S. agricultural exports.

Periodicals

Outlook for U.S. Agricultural Exports. *Subscription.* 4 issues. **Stock # AES. $17.00.** Offers the latest value and volume of U.S. farm exports, by commodity and region, as well as agricultural trade balance, import commodities, and export outlook.

Foreign Agricultural Trade of the United States (FATUS)/ U.S. Agricultural Trade Update. *1997 subscription to include 12 issues of Agricultural Trade Update, plus two annual FATUS supplements.* **Stock # FAT. $34.00.** Updates the quantity and value of U.S. farm exports and imports, plus price trends. Concise articles analyze specific aspects of the export/import picture. Keeps readers abreast of how U.S. trade stacks up in a global market.

World Agricultural Supply and Demand Estimates. *Subscription.* 12 issues. **Stock # WASDE. 1 yr, $35.00; 2 yrs, $70.00; 3 yrs, $105.00.** Issued monthly, WASDE provides the most current USDA forecasts of U.S. and world supply-use balances of major grains, soybeans and products, and cotton; and U.S. supply and use of sugar and livestock products.

To order, just dial 1-800-999-6779. Toll free in the United States and Canada. Other areas, please call 1-703-834-0125. Or fax your order by dialing 1-703-834-0110. Call 1-800-999-6779 to charge your purchases to your VISA or MasterCard. Or send a check or money order (made payable to ERS-NASS) to: ERS-NASS, 341 Victory Drive, Herndon, VA 20170. Payment must accompany all mail orders. Please add 25 percent to all foreign addresses.

U.S. Department of Agriculture
Economic Research Service
1301 New York Avenue, NW
Washington, DC 20005-4788